

[Chem. Pharm. Bull., 39, 798-800 (1991)]

[Lab. of Hygienic Chemistry]

**Polysaccharides in Fungi. XXVI. Two Branched (1→3)- β -D-Glucans
from Hot Water Extract of *Yu ěr*.**

TADASHI KIHŌ, MIHO SAKUSHIMA, SHURU WANG, KATSUYUKI NAGAI, SHIGEO UKAI*

Two water-insoluble glucans, U-3-N ($[\alpha]_D + 1.0^\circ$, 0.5 M sodium hydroxide) and U-3-AP1 ($[\alpha]_D + 2.5^\circ$, 1M sodium hydroxide) were isolated from hot-water extract of the fruiting bodies of *Yu ěr* (Chinese name) (*Auricularia* sp.). U-3-N and U-3-AP1 were investigated by a combination of chemical and spectroscopic methods. The results indicated that U-3-N was similar to β -(1→6)-branched (1→3)- β -D-glucan (N-5P) isolated from the alkaline extract of the fruiting bodies, and U-3-AP1 was β -(1→6)-branched (1→3)- β -D-glucan containing β -(1→6)-linked D-glucopyranosyl residues. U-3-N showed potent antitumor activity against sarcoma 180, although U-3-AP1 had little effect on the tumor.

[Chem. Pharm. Bull., 39, 1615-1616 (1991)]

[Lab. of Hygienic Chemistry]

**Mitogenic and Colony-Stimulating Factor-Inducing Activities of Polysaccharide
Fractions from the Fruit Bodies of *Dictyophora indusiata* FISCH.**

CHIIHIRO HARA, YOSHIO KUMAZAWA, KAZUNARI UNAGAKI,
MASAHIRO KANEKO, TADASHI KIHŌ, SHIGEO UKAI*

Biological effects (mitogenic and colony-stimulating factor (CSF)-inducing activities) of five homogeneous polysaccharides and a conjugated polysaccharide fraction isolated from the fruit bodies of *Dictyophora indusiata* were investigated. Fucomannogalactan (T-3-Ad) and conjugated polysaccharide fraction (T-2-A) exhibited significant mitogenic and CSF-inducing activities. Among two β -(1→6)-branched (1→3)- β -D-glucans (T-4-N and T-5-N), only T-4-N showed both mitogenic and CSF-inducing effects. Partially O-acetylated (1→3)- α -D-mannans (T-2-HN and T-3-M') did not show these effects.

[Chem. Pharm. Bull., 39, 956-963 (1991)]

[Lab. of Hygienic Chemistry]

**Gas Liquid Chromatography-Mass Spectrometry of Paraquat and
Diquat Reduction Products. A Reductive Cleavage of Paraquat and
Diquat by NaBH_4 in the Presence of a Transition Metal Salt (Ni^{2+}).**

SUSUMU KANNO, YUZI TAKEKOSHI, SYOZI KAWASE, SHIGEO UKAI*

When herbicide preparations paraquat (I) and diquat (II), based on N-alkylbipyridylum derivatives, were analyzed by GLC with sodium borohydride-nickel (II) chloride reduction, the chromatograms showed minor side peaks from slight amounts of by-products appearing in front of the main peaks, arising from the respective perhydrogenerated products of I or II. Reductive cleavage of a C-N bond within each pyridine ring of I or II was suggested in view of the production of trifluoroacetic acid derivatives prepared from these by-product. The by-products were presumed to be *p*-(N-methylaminopent-3'-yl)-N-methylpiperidine from I or 1-butyl-2-aza-perhydroquinolizine from II.